

## Susceptibility Measurements Near the $^3\text{He}$ Liquid-Gas Critical Point

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An experiment is now being developed to measure both the **linear susceptibility** and **specific heat** at constant volume near the **liquid-gas critical point** of  $^3\text{He}$  in a microgravity environment. An electrostriction technique for measuring susceptibility will be described. Initial electrostriction measurements were performed on the ground along the critical isochore in a 0.5 mm high measurement cell filled to within 0.1 % of the critical density. These measurements agreed with the susceptibility determined from pressure-density measurements along isotherms. The critical temperature,  $T_c$ , determined separately from specific heat and susceptibility measurements was self-consistent. Susceptibility measurements in the range  $t = T/T_c - 1 > 10^{-4}$  were fit to  $\chi_T^* = \Gamma^+ t^{-\gamma} (1 + \Gamma_1^+ t^\Delta)$ . Best fit parameters for the asymptotic amplitude  $\Gamma^+$  and the first Wegner amplitude  $\Gamma_1^+$  will be presented and compared to previous measurements.

*low temperature physics*

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